PHENIX

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This handbood is being revised as of 11/17/99
Please contact Wm Lenz X7117 or wlenz@bnl.gov

PHENIX Safety Handbook
for Employees, Visitors, and Guests

RHIC Project
Brookhaven National Laboratory
Upton, Long Island, NY
http://www.phenix.bnl.gov

Table of Contents

INTRODUCTION

Every participant in the PHENIX collaboration is responsible to conduct themselves in a manner that protects their own safety and that of others. Additionally, we are all obligated to participate in the effort here at the Laboratory to ensure everyone's safety and to protect the environment we work and live in.

Safety and environmental protection depend on every person being aware of established rules and procedures for performing various tasks, and applying these consistently in their everyday work. This handbook is intended as an introduction and working reference to the information you will need to accomplish this. It does not release you from having knowledge of, and complying with, all DOE and BNL safety requirements pertinent to your work.

The PHENIX collaboration is committed to completing and running all aspects of the detector with a *perfect safety record*. This can only be achieved with the active participation of every PHENIX member. To this end, each must take her or his safety and environmental protection responsibilities seriously at all times.

Some may quibble that a perfect record is impossible and that there will always be accidents. This would imply that some people will be hurt. Would you want to volunteer to be one of them?

Let's aim for perfection!

SAFETY and ENVIRONMENTAL RESPONSIBILITIES

PHENIX safety policy follows that of the Laboratory. This quotation from the BNL **Environment, Safety & Health (ES&H) Standards,** defines each persons safety responsibilities:

Each individual is responsible for performing his assignments in a manner that will not endanger himself or his fellow employees and for complying with established safety rules and requirements. Employees are encouraged to contribute to the safety program and to bring potentially unsafe conditions to the attention of their supervisors, safety coordinators, or ES&H.

In PHENIX, the Safety Coordinator has responsibility for the safe conduct of day to day operations. Each work area has a Person In Charge (PIC) who is responsible for safety in that area. This position is equivalent to the "Activity Manager" as defined in the RHIC SEAPPM. However, these people can only succeed in creating a safe working environment with the cooperation of every person in PHENIX.

If you are aware of an environmental or safety problem in your work area, or you are unsure about an aspect of your assignment that may have environmental or safety implications, it is imperative that you immediately discuss the situation with the appropriate people. Your first point of contact is the PIC for the area in which you are working.

You must immediately report any spill or other incident with environmental consequences to the ES&H coordinator in the department in which it occurred.

If you are working in a restricted area (for example, where a hard hat or eye protection is required, or a radiation area) or doing work that involves significant hazards, make certain that you are properly trained, properly equipped, and that you take all reasonable precautions. If you are using machinery be sure that you use all the required personnel protection equipment, that you have the proper training, and are qualified to use the equipment.

If you become aware of the unsafe use of equipment by either employees or visitors, you should discuss the unsafe situation with the individual involved and report it to the PIC or, if the PIC isn't available, any other member of the PHENIX Safety organization.

EVERYONE working at BNL has the responsibility and authority to issue a "Stop Work" order if there is an imminent danger to individuals or the environment, or if a radiological control requirement is violated. If you issue a "Stop Work" order you must immediately report your action to the PIC of the area AND the PHENIX Safety Coordinator. They will assist you in making other notifications required by BNL and project policy. If you receive a "Stop Work" instruction **you must stop work immediately** and follow laboratory and project procedures for restarting.

As a member of the PHENIX collaboration working at BNL it is your responsibility to perform your work in a safe manner while protecting the environment, and to comply fully with all safety rules at all times. This includes respecting postings of every hazard, even ones that you judge may no longer apply or when you feel that a posted area is safe.

WORKING at BNL

Visitors and Guests

Guest Appointments

Everyone who will work at BNL, in an office, lab or factory area must have an employee or guest appointment **before** beginning work. Anyone who regularly visits BNL for meetings or discussions must also obtain a guest appointment. Everyone with an appointment at the Laboratory must take the General Employee Training (GET) as described below.

Planning your arrival

You must inform the PHENIX project office of your plans well in advance of your arrival. You may do so by phone or mail or by the preferred method of using the interactive form in the PHENIX Pre-Check in Procedure.

Checking In

If you are joining PHENIX from another group at BNL, or arriving at BNL to work on PHENIX you are required to check-in with Donna Earley (x4007) or Mariette Faulkner (x4064) at the PHENIX office in the Physics building (510) **before beginning any work for PHENIX.** Beyond this, additional check-in procedures are required by the Laboratory and any departmental areas in which you will be working. These are described in the PHENIX Check-In booklet available on the WEB.

http://www.phenix.bnl.gov/phenix/project_info/working-at-bnl

Where to Get Information and Assistance

PHENIX

Your first point of contact on safety matters is the Person In Charge (PIC) for the area in which your work is being done. This handbook describes additional sources of information regarding safety, as well as people who can help when problems arise. They are listed at the back of the book along with their phone numbers.

The PHENIX Safety WEB page contains a wealth of additional information on all aspects of safety at work, including this handbook. It can be reached through a link on the PHENIX home page.

http://www.phenix.bnl.gov/

In the Departments
Each department has an ES&H coordinator as well as individuals responsible for safety subjects specific to the department. They are also listed in the back of this handbook.

ES&H Services Division
ES&H personnel provide guidance, assistance and expertise in safety related matters. Each area has ES&H representatives and technicians who handle routine safety concerns. Experts on various subjects are also available for consultation on more complex issues.

Documentation
Besides this handbook, there are two safety bibles that you should be familiar with.

- The Environmental Safety and Health Standards Manual defines BNL safety policy and standards.

- The RHIC Safety & Environmental Administrative Procedures and Policy Manual (SEAPPM) defines policy and procedures specifically regarding the RHIC project.

The full text of the ES&H manual and the RHIC SEAPPM are available through links on the PHENIX Safety WEB page. Hard copies of both are available for inspection in the office of the PHENIX Safety Coordinator and the RHIC Project ES&H office in building 1005.

Training for Safety and Environmental Protection

After receiving your appointment as an employee or guest, **you must take the General Employee Training (GET) before starting any work at BNL.** If you already have a guest appointment and have not taken this training you must do so before continuing work at the Laboratory. This training is given only on Monday afternoon, so your arrival at BNL should be planned accordingly**.**

Depending on the type of work you will be doing, additional training may be required. Upon arrival for work, the PIC for each of the areas where you will be working will determine your training requirements and schedule you for the courses. You must complete all orientations and courses needed for a given type of work before starting that work.

Your individual training history at BNL and a schedule of standard training courses are available through the PHENIX Safety WEB page.

http://www.phenix.bnl.gov/phenix/project_info/safety

Here is a list of most of the safety courses applicable to people working in PHENIX.

General Courses

- General Employees Training (GET)
- Stop Work Training
- RHIC Access Training
- Video Display Terminal Training
- General Employee Radiological Training (GERT)
- Radiological Worker
- Hazard Communication
- Supervisor Training
- Back Safety
- Fire extinguisher
- Portable Power Tool Training
- Machine Shop Safety*

Electrical Courses

- Electrical Safety I
- Lockout/tagout
- Working Hot

Rigging and Construction Courses

- Overhead Crane
- Practical Crane Training
- Practical Forklift Training
- Forklift
- Arial lift*
- Fall Protection/Working at Heights*

Specialized Courses

- Compressed gases
- Laser Safety Awareness
- Cryogens
- Confined Space
- Hazardous waste generator
- ODH (Oxygen Deficiency Hazard Training) *

*Available by special arrangement through your PIC.

Professional Medical Assistance

First aid is the responsibility of the Occupational Medicine Clinic and the Emergency Medical Technicians (EMTs) of the Fire/Rescue Group. In an emergency, call x2222 to summon the EMTs. For non-emergency first aid, you should go to the clinic. After hours and on weekends the clinic is closed and all medical assistance is provided by the EMTs. The non-emergency number for the Fire/Rescue Group is x2350. You can either go to the fire station or call and ask them to send an EMT to you.

PHENIX Work Areas

Factories and Laboratories

PHENIX activities take place primarily in work areas under the jurisdiction of the Physics Department, AGS and RHIC. Each of these departments has an Environment, Safety and Health organization responsible for maintaining a safe working environment as well as administering the rules and policies of the department, the Laboratory, and the DOE. This includes reviewing all equipment and activities and performing inspections to ensure that all requirements are being met.

These people must be made aware of all activities, chemicals, and equipment present in their areas. It is your responsibility to notify the PIC who must then inform relevant department personnel and, if necessary, ES&H before you make any significant change in the equipment, activities or procedures performed in an area.

With PHENIX activities taking place in buildings belonging to several different departments, situations will arise when equipment, chemicals, or procedures will be moved from one department to another. When this happens, you must inform the people responsible in the affected departments of your intentions in advance so that they can perform any necessary reviews or inspections.

Examples of items that you must report to departmental safety organizations include:

- lasers
- radioactive sources
- lifting devices
- flammable gases
- chemicals and materials

APPROVAL MUST BE ISSUED BY EACH DEPARTMENT WHERE YOU WILL USE A GIVEN ITEM.

In each of the above cases the PICs of the relevant areas should also be informed. Consult the PIC or the PHENIX Safety Coordinator if you are unsure of the implications of changes you plan to make or have questions about who to notify.

Personnel working in any department must meet that department's Training and Qualification (T&Q) requirements for themselves and safety review requirements for their activities and equipment. Consult the PIC or the PHENIX Training Manager if you need information on any aspect of these requirements.

The PHENIX Experimental Hall (PEH)

The PEH (building 1008) is a heavy construction area and many of the activities there are hazardous. The PEH has been designated as an unconditional "hard hat area". This means hard hats must be worn at all times. Additionally, safety shoes are required for anyone doing mechanical or assembly work.

If you have work to do anywhere in the 1008 complex, it must be coordinated and scheduled with the 1008 PIC. This means the PIC must know what or your group will be doing and when it will be done. Depending on the situation you may make arrangements for individual work sessions or for an entire course of work. Of course, you and the work crew must have the proper training and necessary personal protection equipment before beginning work.

There are many hazards that a casual visitor may not be aware of. These include work being done overhead, heavy mobile equipment, high voltages and currents, welding, flammable gasses, oxygen deficiency (ODH), radiation safety, and others. Nonessential people can interfere with hazardous work and expose themselves or others to unnecessary risk. Consequently, there are some restrictions on visiting or touring the PEH. These will very from time to time depending on activity in the hall. For information on the current situation please check the "PHENIX Tours and Visits" link on the PHENIX Home Page.

Security is of major concern at the 1008 complex due to the isolated location and the nature of the equipment there. It is important that all buildings at 1008 be kept locked when not attended, especially after normal working hours.

WORKING SAFELY

Evaluation of a Task

When you begin a task, it is your responsibility to ensure that it is performed safely. Each task should be evaluated for hazards and environmental impact. This is not always as trivial as it sounds. If necessary, the PIC for the area will assist you. If you cannot obtain satisfactory assistance, contact the PHENIX Safety Coordinator, or the Project Director. Among the things to be considered are:

1. Do you understand the safety implications of the task. If you are not sure, ask.

2. Is any safety equipment or personal protective equipment necessary? These might include lab coats, gloves, safety glasses, safety shoes, hard hats, respirators, ventilation, shielding, etc. If needed items are not already available, your PIC will obtain them before you start the task.

3. Do you need any additional training? If so, advise your PIC. If none is available in a timely manner, **it is your responsibility** to make it clear to your supervisor and the PIC that you cannot proceed without proper qualified instruction. Sometimes this can be from an experienced group member.

4. Is it necessary to notify or consult the departments ES&H Coordinator before you begin the task? If you are not sure, you should consult your PIC, the BNL ES&H Standards, or the PHENIX Safety Coordinator.

Setting Priorities

Tasks related to safety and environmental protection should always receive priority. This applies not only to obvious emergencies but to routine safety tasks, correcting safety violations, and satisfying issues raised during safety inspections.

Effective Communication

To work safely it is important that you be able to communicate with those around you. Individuals who do not know English well enough to understand safety instructions should be accompanied by someone who can act as translator when they work in experimental, assembly and shop areas.

Areas containing hazards such as radiation, flammable gas, high voltage, magnetic fields, or lasers must be clearly posted according to the requirements in

the ES&H manual. This also applies to areas requiring personal protection equipment.

Safety Equipment

There are many situations where use of personnel protective equipment is not only prudent for your own safety, but required by laboratory policy. The requirements are described in the RHIC SEAPPM section 1.16.0. Your PIC will work with you to determine what rules apply in a given situation. Please note that some equipment requires training for use. It should be emphasized that use of equipment prescribed by the SEAPPM or your PIC is REQUIRED and is not at the discretion of the individual.

Consequences of Radiological Safety and Environmental Violations

BNL and its managing organization, Brookhaven Science Associates, operate all radiological programs at the Laboratory under Federal regulation 10CFR835 also known as The Price-Anderson Amendments Act (PAAA). This legislation applies specifically to radiological protection of workers and carries with it substantial penalties for violation. Failure to comply with the provisions of this law, or to report a non-compliance to the DOE, subjects the Laboratory to a civil penalty of up to $100,000 per violation. Individuals who willfully and knowingly violate these or other BNL rules or procedures for proper use of radiation can expect to receive disciplinary action. Depending on the circumstances, this may include restricted access to the work site, loss of guest appointment and BNL site privileges, termination, and in extreme situations, criminal prosecution. DOE has established a special investigation and enforcement office for the PAAA provisions. They are actively and aggressively enforcing these rules and have already levied fines of over $200,000.

Remember - ALL people working on PHENIX are expected to comply fully with ALL safety rules. This includes respecting postings of every hazard, even if you judge that they no longer apply or that the posted area is safe.

PHENIX SAFETY WORK RULES

Note: These rules supplement but do not replace those set forth by BNL's ES&H policy.

WORKING

⇒ The first rule of safety is that you are responsible for your own safety, and that you not endanger those around you.

⇒ The PIC is responsible for overseeing all activities in her or his area.

⇒ You must have permission from the PIC before beginning work in an area.

⇒ For all areas where you will be working, you must know the locations of:

- Exits
- Fire extinguishers
- Eye wash stations
- Green safety placards
- Nearest telephone (and the emergency numbers: x2222 and 911)
- Fire alarm pull box

⇒ PHENIX operates under a two person rule for all laboratories, factories, and assembly work areas. You should never work alone in any of these areas unless you have made arrangements with the PIC. You must also contact BNL Security (x2238) to be included on their "check-on" list. When you leave you must then let them know. In 1008 ALL work requires two people to be present in the building.

⇒ You may not work after hours in a PHENIX factory area unless you have a work plan and it's approved in advance by the PIC. The PIC or an approved alternate must be present. If you will be alone, the above requirement for contacting security also applies.

SAFETY EQUIPMENT

⇒ Safety shoes are **required** for work in PHENIX lab and factory areas unless the Safety Coordinator has issued an exemption. *Note:* The safety shoes you desire may not be available immediately upon your arrival at BNL due to stocking limitations on sizes and styles. If you already have safety shoes or prescription safety glasses please bring them with you so you can start work in a timely manner.

⇒ Safety glasses are required for all work with power tools.

SAFETY EQUIPMENT (continued)

⇒ Hardhats must be worn for activities or in locations that expose you to a potential head injury. This includes areas where a crane is in operation, where someone is working above you. See your PIC if you need a hardhat.

⇒ Fall protection equipment is generally required if you are working at a height of more than 6 feet. Depending on the situation, this may be a railing, a safety net or a harness. The PIC of your area can provide you with fall protection equipment, and can arrange appropriate training for its use.

⇒ Many safety-related items are *Restricted* stock items. This is to ensure that you are using an item appropriate to the task at hand and have the proper training for its use. The Department ES&H Coordinator has supplies of such items (respirators, eye protectors, ear plugs, assorted safety signs, rope, etc.) available. Your PIC can help you obtain these items.

⇒ Some activities have specific requirements or limitations regarding clothing that may be worn.

RADIOLOGICAL

⇒ It is extremely important that all radiological postings and rules be followed exactly. The signs at a posted area state what restrictions apply there**. You must never remove postings or enter posted areas unless specifically authorized**. Whenever there is any doubt about whether an activity is allowed, do not proceed until you have a definite answer from ES&H.

⇒ All radioactive sources **must** be inventoried and tracked by ES&H. In addition, all sources must be properly labeled and stored in a secure location that is approved by both ES&H and the host Department. **If you plan to bring any type of radiological source to the BNL site you must notify ES&H in advance of its arrival**. Upon notification, ES&H will assist you in completing the necessary paper work to document the incoming source material. ES&H will set-up the proper radiological postings and barriers around the designated area in which the source will be used. ES&H must be informed before any transfer of any source beyond its designated area. Remember, when entering a posted area, read and comply with all requirements on the signs and **never** remove postings without the advance approval of ES&H!

MACHINERY and MACHINE TOOLS

⇒ Before using any machine shop equipment you must be technically qualified and you **MUST** be certified by the appropriate department training coordinator. Your PIC will assist you with this.

⇒ Any problems with shop equipment should be reported immediately to the PIC and shop supervisor. You should stop using the equipment until the problem is resolved.

⇒ If you see someone misusing shop equipment, inform the PIC or shop supervisor. If you believe that the person is likely to hurt themselves, then you should stop the work.

⇒ Use of cranes, forklifts and aerial lifts (man-lifts) requires training and qualification from the ES&H Division and authorization by the PIC.

MATERIAL HAZARDS

⇒ Each laboratory must have either electronic access to Material Safety Data Sheets (MSDS) or the appropriate hard copies available for all hazardous material in that lab. MSDSs are available from ES&H (Wendy Mosca, x4935) or electronically at

http://www2.sep.bnl.gov/cms/msds.pl

⇒ You must report any chemical spills immediately to your ES&H coordinator and the PIC in the area. Any environmental concerns or waste issues should also be brought to the their attention.

⇒ Depending on their classification, it may be required to maintain control over the inventory of certain materials.

⇒ If you purchase material you must obtain the appropriate MSDS, and ensure that the appropriate hazard labeling is on the container and that it is stored properly. Chemicals are bar coded at Shipping and Receiving when they arrive at BNL.

⇒ If you bring any chemicals onsite from your home institution, you must arrange to have them bar coded on arrival (call Wendy Mosca x4935).

⇒ All fluids must be in proper containers with the appropriate Hazard labeling.

⇒ All temporary (unlabeled) containers must be emptied properly before you leave the area.

⇒ If a material you need to use is highly hazardous (rating of 3 or 4 on the hazard label), it would be appropriate to ask if a less harmful material can be substituted.

⇒ You are responsible for reporting when a bar coded container is empty, and when chemicals under your control are transferred to other areas. Forms are available for this. See your PIC for information.

⇒ Use of flammable gases requires approval by the PHENIX Safety Coordinator, and the ES&H coordinator for the area in which they will be used. You must be certified in procedures for the type of gas you will be handling. Procedures and regulations are contained in the ES&H manual section 4.11.0, and the RHIC SEAPPM section 4.11.0.

⇒ As with any other hazardous material, use of compressed gas cylinders or cryogenic liquids requires notification of the relevant people in the area where they will be used. Training is required before working with either of these materials.

THE PHENIX SAFETY ORGANIZATION

Description

A. The Project Director has ultimate responsibility to ensure that PHENIX meets the relevant ES&H requirements of RHIC, BNL and DOE.

B. The PHENIX Safety Coordinator, appointed by the Project Director, has the responsibility for the design and implementation of ES&H and training procedures throughout the Project at BNL. His or her responsibilities include all those listed in Section 1.3.5.1 in the RHIC Safety and Environmental Administrative Policy and Procedures Manual (SEAPPM) under "III. Training" and "IV. Reviewers." The PHENIX Safety Coordinator has two Deputy Safety Coordinators. One is charged with coordination and reporting on the safety of all activities in Building 1008, 1008A and 1008C. The other is charged with coordination and reporting on the safety of all activities in the other PHENIX activity areas on site, and with the coordination of safety training for PHENIX.

C. Building Manager - the Building manager is a BNL-defined position assigned to various buildings on site. As defined in the RHIC SEAPPM, the building manager has "general facility safety responsibilities." In PHENIX this is defined as safety issues related to the building itself, for example:

- Electrical safety to the panels
- Crane safety
- Building Life safety, such as walkways, railings, etc.

D. For each work area the Project Director has appointed a **Person In Charge (PIC)**. This position is equivalent to the "Activity Manager" as defined in the RHIC SEAPPM. The PIC is resident at BNL, typically a BNL employee, and reports to the Local Subsystem Manager (LSM, see below) who is directly responsible for that area's assigned activity. The PIC, in consultation with the PHENIX Safety Coordinator and Deputy Safety Coordinators, determines the training requirements for all people assigned to his or her work area. The PIC is responsible for ensuring that work performed in that area is done in accordance with ES&H guidelines.

E. The Project Director has formed the PHENIX Safety Working Group, charged with coordinating and overseeing all aspects of PHENIX safety and review. This group includes a physicist in charge; 3 engineers responsible for overall safety systems, gas and electrical systems; a coordinator for reviews, follow-up of action items, and documentation; senior technicians responsible for experimental area safety, training, and factory activities. The engineer responsible for overall safety systems is the PHENIX Safety Coordinator and has line responsibilities as defined in paragraph B above.

F. Each individual PHENIX participant is responsible for the safety of his or her own work at BNL.

In addition to these individuals, there are PHENIX personnel whose functions are closely related to these activities but who do not have explicit safety responsibilities:

1. **Local Subsystem Manager (LSM)** - a scientist or engineer, appointed by PHENIX Project Management, who manages the activities carried out by the PIC in the given subsystem area. The LSM may or may not be a BNL employee but must be resident at BNL. The PICs answer directly to them, except for ES&H issues.

2. **Support Services Manager (SSM)** - The SSM is a service provider within PHENIX, with the Detector Groups, System Engineering & Integration and Electronic Facilities & Infrastructure as primary customers. The various tasks required under the SSM responsibility are to be performed by technicians, tradesmen, or vendors, as appropriate. Specific job responsibilities include: procurement, arrangement and customization of space for PHENIX activities; maintenance, training and Plant Engineering liaison on cranes, lifts and material handling equipment; management of PHENIX vehicles; receiving, storage, inventorying of material and components; disposal of materials, and clean up after major tasks.

PHENIX Safety Organization -- Who and Where

Project Director - S. Aronson 2015
Deputy Project Director - Safety Working Group chair - M. Marx 7787
PHENIX Safety Coordinator - Wm. Lenz 7117
Deputy Safety Coordinators

Building 1008 complex	S. Marino	3704, 3652, 6323
Other activity areas	W. Lenz	7117 (5612)

Training Manager	J. Collins	7777 (5777)
Support Services Manager	J. Collins	7777 (5777)
Tour coordinator for 1008	B. Johnson	4552, brant@bnl.gov

The PHENIX Experimental Hall 3652

PICs and LSMs

Building(activity)	LSM extension (pager)	PIC extension (pager)
510 (Officces & Labs)	C. Woody 2752	W. Lenz 7117 (5612)
510 (BB)	H. Ohnishi 4999	W. Lenz 7117 (5612)
510 (MVD)	C. Woody 2752	W. Lenz 7117 (5612)
510 (ToF)	S. Sato 4990	W. Lenz 7117 (5612)
820 (PC)	M. Sivertz 6102	W. Licciardi 6395
832 (TEC)	E. O'Brien 4318	C. Biggs 7515 (0227)
832 (RICH)	K. Shigaki 7801	K. Jones 6056
902 (EMCal)	E. Kistenev 7502	M. Lenz 5423 (0914)
905 (Mu Tracking)	TBA	W. Sandhoff 4988, 4987
905 (Mu ID)	K. Kurita 7374	J. Tradeski 5383
1008 PEH	S. Mulhall 4555 (7105)	S. Marino 3704,3652, 6323 (0109)
1008A PEH	P. Giannotti 3815	M. Van Lith 7821

Building Managers

510	K. Einfeldt 2281 (5609)
820	T. Muller 4507,4283 (4100)
832	J. Collins 7777 (5777)
902, 905	P. Ribaudo 4572,5134 (4150)
1008, 1008A, 1008C	S. Mulhall 4555 (7105), mulhall@bnl.gov
1008B	D. Cattaneo 2134 (5313)

The area code and exchange for BNL is 516-344

Safety Working Group Members

Physicist in charge	M. Marx 7787 or 632-8102(SUNY Stony Brook)
Overall safety systems engineer	W. McGahern 2171 (4422)
Gas systems safety engineer	J. Rank 8101
Electrical systems safety engineer	C. Jacobs 2244
Review coordinator/ documentation	T. K. Shea 3454
PHENIX Experimental Hall Safety	S. Marino 3704 (0109)
Training and Liaison to other work areas	W. Lenz 7117 (5612)

Department Contacts

DEPARTMENT	**ES&H Coordinator**	**ES&H Services Representative**	**Training Coordinator**
Physics	Ron Gill x3987 Pager 5607	Joe Vignola x3846 Pager 6160 Frank Zafonte x4027 Pager 6156	Mike Zarcone x 5890 / 2585 Pager 8502 Zarcone@bnl.gov
RHIC Assistant. to Project Director: Steve Musolino x4211 Pager - 4174	Asher Etkin x7200 Pager 5605	Lori Bower x4617 Pager 6190 Dorian Mergen x7127 Pager 6190	James Licari X7146
AGS	Bill Sims x3271 Pager 4210	Roy Thern x7531 Pager 6066	Elliott Auerbach x3947

PHENIX Group Safety Handbook
Prepared by W. McGahern, T. Shea, J. Throwe